INTERRUPTER CIRCUIT
FOR TESTING AND ADJUSTING SUPERVISORY RELAYS
DESCRIPTION

1. GENERAL:

1.1 This section describes the circuit used in connection with the No. 163 type interrupter for testing and adjusting "A" cord supervisory relays.

2. DESCRIPTION OF INTERRUPTER CIRCUIT:

2.1 As shown on Drawing 1, the interrupter circuit is arranged so that one interrupter may be employed for four central office buildings. The arrangement for each building is such that testing and adjusting circuits for equipments on four floors are available.

2.2 If there should be two offices in the same building and the combined "A" board equipment does not extend over more than four floors, the two offices can be treated as one unit as regards the testing and adjusting circuits shown on Figs. 2 and 3 of Drawing 1.

2.3 The limiting feature in regard to extending the use of the interrupter to units in distant buildings is that the resistance of the loop over which the interruptions are sent shall not exceed 750 ohms.

3. OPERATION OF CIRCUIT:

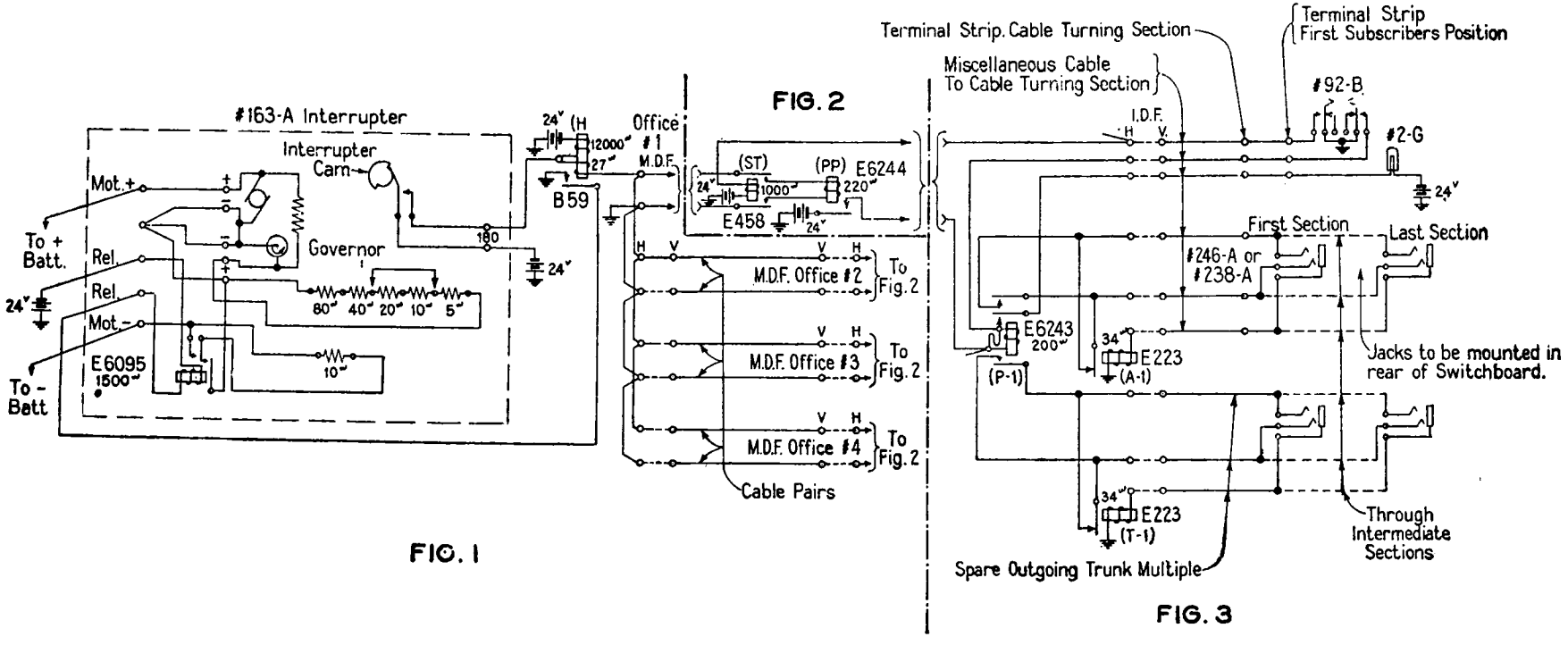
3.1 By depressing the No. 92-B key, ground is furnished to the "ST" relay, which operates, closing the circuit from battery either through the 12,000-ohm and 27-ohm windings of the "H" relay in series or, if the interrupter contacts are closed, through the 27-ohm winding only, through the winding of the "PP" relay and back to ground. The "H" relay operates but if the interrupter contacts are open, not enough current flows to operate the "PP" relay. The operation of the "H" relay closes the circuit through the motor control relay which operates, thereby starting the motor. When the No. 92-B key is depressed, ground is furnished to the winding of the associated interrupter relay ("P-1" or "P-2," etc.) and its operation depends upon the supply of battery through the make contact of the "PP" relay. The "PP" relay operates when the interrupter contacts close and shunt out the 12,000-ohm winding of the "H" relay. Therefore, as the interrupter contacts make and break, the "PP" relay operates and releases, which in turn allows the "P-1" (or "P-2," etc.) relay to operate and release. The action of the "P-1" (or "P-2," etc.) relay opens and closes the circuits to the associated jacks in the switchboard and causes the lamp associated with the No. 92-B key to flash, giving indication that the circuit is functioning.

3.2 Upon connecting the interrupter circuit to the test set and cord circuit, the "T-1" or "A-1" (or "T-2" or "A-2," etc.) relay is operated by battery from the sleeve of cord under test. When the "operate" key of test set is depressed, current flowing through the supervisory relay is interrupted intermittently by the operation of the "P-1" (or "P-2," etc.) relay as described previously.

3.3 When setting up or checking the "operate" current flow value, the sleeve circuit must be opened between the cord under test and the interrupter jack. This allows the "T-1" or "A-1" (or "T-2" or "A-2," etc.) relay to release, thereby short circuiting the "P-1" (or "P-2," etc.) relay contacts associated with the testing circuit. After having made this check, it will be necessary, of course, to close the sleeve circuit before proceeding with the testing.

Note: Opening of the sleeve circuit in the case of cords equipped with sleeve relays prevents setting up proper current flow values. Where it is necessary to check the current flow readings on a cord so equipped, the sleeve of the interrupter circuit should be opened and ground supplied to the sleeve of the cord under test. This applies only when testing from the front of the board, because when testing from the rear of the board an external ground is used.

3.4 As shown on Fig. 3 of Drawing 1, the starting key and associated lamp are common to the testing and adjusting circuits for the equipment on the floor only. The lead from the "ST" (Start) relay is multiplied at the horizontal side of the I.D.F. to the No. 92-B keys on other floors, and the interrupted battery lead to the "P-1" relay is multipled to the "P-2," "P-3" and "P-4" relays. With this arrangement, the operation of any key will start the interrupter, cause the lamp for the particular floor to flash and introduce the interruptions into the associated testing and adjusting circuits. If the interrupter has been started by one key, the operation of any other key will bring about the flashing of its associated lamp and the introduction of the interruptions into its associated testing and adjusting circuits. It will be noted that these circuits are independent of each other as regards the current paths, thereby providing for simultaneous testing and adjusting operations without interference.



DRAWING 1—INTERRUPTER CIRCUIT FOR TESTING AND ADJUSTING SUPERVISORY RELAYS